Case Studies

Eight Enclosures With Style

Strictly speaking, the case is perhaps the least important of the major computer components. You can't get by without a motherboard, RAM, power supply, or storage, but the case is optional. So why do PC enthusiasts and do-it-yourself system builders alike spend a lot of time obsessing over their machines' cases? The case is the visible personification of your computer. You may want a computer that's showy, decked out with internal lights and a side-panel window, or one that's functional, with exceptional cooling and support for hot-swappable drives. Although there's no right case for everyone, there's one thing that everyone can agree on: No computer lover wants to be seen using a beige plastic box.

I examined eight high-end cases for PC builders. No ugly beige boxes here—these cases display elegant designs and handy features that go far beyond merely housing the internal components. And no two models are quite alike: Each of these boxes brings its own set of tricks to the table. Chances are one of them is the perfect starting point for your next PC.

Unless otherwise noted, our subjects are tower cases that support ATX motherboards and offer front panel or top panel connectors with one FireWire port, two USB ports, and microphone and headphone jacks.

Antec Nine Hundred

If the Antec Nine Hundred could talk, it would have a one-word vocabulary: fans. It would shout this word from the rooftops. It would whisper it in your ear: fans. The front of Nine Hundred's sleek, black case includes two 120mm fans, lit with blue LEDs. A 200mm fan dominates the top of the case. And at the rear of the case, there's another 120mm fan. It's clear that this case will blow whatever heat you can produce inside—through overclocking, fiery hard drives, or PCI cards whose sole purpose is to produce heat—out with ease. The entire front bezel is perforated with tiny airflow holes. Each of the fans includes a switch with three settings that let you select the speed (and thus, air flow and noise level) that's best suited to your situation.

The top of the matte black case has an unusual but pleasant sloping angle. Inside, the case provides copious space for drives and seemingly endless options for installing them. There are a maximum of nine external drive bays, although the default placement of the front fans and internal drive bays limits the configuration to three external 5.25-inch drives and six internal hard drives. (And if you want to go crazy with DVD burners, for example, you can remove the hard drive cages and fans for nine external drive bays.) The left side of the case has a large window with space for adding an optional 120mm fan for enhanced VGA cooling. Inside, behind the hard drive cage, is a mounting bracket for yet another optional 120mm fan. (If you install that fan, you're limited to six instead of nine drives.)

All in all, the Antec Nine Hundred combines an elegant look and plentiful space for drives with over-the-top cooling.

Nine Hundred
$125
Antec
www.antec.com
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Enermax Phoenix ECA309

The Enermax Phoenix's black sheen and wing-like front panel curves are reminiscent of the Batmobile. This case is stylish but understated; PC builders who want a handsome case that's not a flashy affront to their senses will probably find solace in the Phoenix.

The Phoenix is available in three configurations, with either a side panel window, air duct, or monster fan (which was the unit that I tested). The monster fan, which has an enormous 250mm (about 10 inches) diameter, is located on the left side panel. The large blades allow it to provide great cooling while running slowly and quietly. An easy-to-access switch lets you toggle the fan between intake, exhaust, or inactive. Aside from the fan, there's space to add a 120mm to both the front and back panels. (Those fans aren't

Phoenix ECA3092
$85
Enermax
www.enermaxusa.com
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CPU RANKING ○ 0 = ABSOLUTELY WORTHLESS | ●●◖ 2.5 = ABSOLUTELY AVERAGE | ●●●●● 5 = ABSOLUTELY PERFECT

included.) The top of the case includes a flip-up door that reveals the power and reset buttons, two USB ports, and microphone and headphone jacks. There's also space to add an optional external SATA jack. The front panel includes five bays for 5.25-inch drives and one 3.5-inch floppy drive bay. Four more internal bays provide space for 3.5-inch hard drives. The case includes tool-free locking clips for installing the drives and PCI cards.

The 250mm fan is the Phoenix's most notable feature. Aside from that, it does its job modestly as a functional, inexpensive, and handsome case.

Zalman Fatal1ty FC-ZE1

If the Fatal1ty was a car, it would be a Hummer—big, powerful, and impressive to look at. But it would be a NASCAR Hummer: The Fatal1ty's front and side panels are covered with various logos and graphics like a racecar. The usual selection of front panel ports also graces the the case's exterior. Inside, the case serves up some impressive specs. A large window dominates the left side panel. Also, three fans—two side-by-side 92mm fans on the front and a hefty 120mm exhaust fan on the back—are preinstalled. Red LEDs give the fans an eerie glow.

The case is constructed of 3/16-inch thick aluminum. Compared to regular cases, you'll appreciate the Fatal1ty's heft. The thick aluminum design makes this case weigh in at about 27.5 pounds. (Just remember: lift with your legs, not your back.) A hinged side panel provides easy access to your PC's innards. After unscrewing two thumbscrews, the side panel swings open like a door. Despite the size and weight of this case, the actual amount of space available for drives is a bit less than some of the other cases examined here, although it's still more than most users would reasonably need. The Fatal1ty can house four external drives and three 3.5-inch internal drives. The unique internal drive cage makes installation particularly easy: A series of spinning bars with rubber rollers keep your drives firmly in place without a lot of screws.

Fatal1ty FC-ZE1
$359.99
Zalman
www.zalmanusa.com
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The Zalman Fatal1ty FC-ZE1 is a hefty, heavy-duty case that would definitely win in a head-on collision with most other PC cases.

Gigabyte 3D Aurora 570

At more than 21 inches tall and 22 inches deep, Gigabyte's 3D Aurora 570 is a big box. It's even wider if you extend the built-in balancing feet. But this big boy brings room to build a big PC, with five 5.25-inch external drive bays, two 3.5-inch external drive bays, and five more 3.5-inch internal drive bays. It also provides plenty of space for installing watercooling components, if you are so inclined. Two piping outlets are built into the rear of the case.

3D Aurora 570
$149.99
Gigabyte
www.gigabyte-usa.com
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Aside from being one of the roomiest cases on the block, the 3D Aurora 570 brings several interesting features to the party. Most notable is the front access panel, a heavy, hinged door that opens up to reveal the external drive bays. (You can lock it to prevent easy access to the drives.) The case also lets you configure the left side panel with your choice of a clear window or aluminum mesh. Gigabyte includes both inserts with the case, and swapping between them is simple. As with the drive access door, the side panel locks to prevent casual access to your PC's precious internal components.

Inside the case, a handy plastic tool enclosure contains screws, wire clamps, power extension cables, hard drive runners, and other useful parts. The toolbox takes up the space of three internal hard drives, but it can be easily removed if you really need that space. One 120mm, blue-LED fan at the front and two more at the rear are also mounted inside the 3D Aurora.

Perhaps the strangest feature is the Aurora's LED projector, which projects a small 3D Aurora logo (or a graphic of your own making) in front of your PC. It's kind of a silly gimmick, but it's just icing on the cake of this giant, watercooling-ready case.

Cooler Master iTower 930

The CoolerMaster iTower 930 houses several interesting traits in a silver and black case with fluid design. Principal among these are its four hot-swappable SATA drive bays. Opening the door on the front of the case reveals the hot-swap bays; pop one open to reveal a tray. You can place a 3.5-inch SATA drive in the tray, pop it back in the case, and voila—you've added a hard drive to your system without shutting down. Inside the case is another interesting addition: an oversized power supply tray with room for an optional mini-redundant power

iTower 930
$149.99
Cooler Master
www.coolermaster.com
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supply to keep your system humming if your main PSU gives up the ghost.

Adding internal hard drives and expansion cards is easy, thanks to the iTower's tool-less clamps and drive brackets. Two fans will help keep your system on ice: A 92mm fan behind the hot-swap trays draws air past your drives, and a 120mm exhaust fan pushes hot air out the back. In addition, a CPU fan duct allows air to pass through perforations on the left side panel. You can adjust the duct to point directly at the CPU fan. The front panel connections include four USB ports (generous compared to the two on other cases in this roundup), a FireWire port, and standard audio jacks.

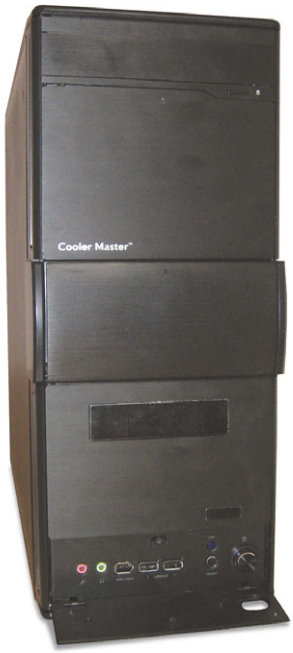
The iTower 930's combination of a redundant power supply and hot-swappable drive support could make this *the* box if you're in need of a PC with minimal downtime.

Cooler Master CM Media 280

At first glance, the Cooler Master CM Media 280 appears to be an unassuming midtower case, but it has an interesting trick up its sleeve: the ability to be used as a tower or a desktop. Panels on the front of the case rotate so they're oriented correctly in either the vertical or horizontal configuration. But this design results in compromises. Among them is the motherboard's unusual position along the left side panel, and switching between the two configurations isn't particularly easy. For a configurable case, placement of the drive bays and other front-panel elements really isn't very flexible.

In the horizontal configuration, the case is designed to work as an HTPC, but the black plastic doesn't look the part and seems like it would be out of place in many living rooms. The case's optional media panel includes a two-line VFD screen, remote control, and rewind/forward/play/stop/volume buttons. It's a nice touch, but not very impressive compared to other HTPC cases.

The Cooler Master CM Media 280 is less expensive than the rest of the cases in this roundup, yet it looks and feels cheaper, with flimsy front panel doors and that strange motherboard mounting configuration. The Media Center 280 is a one-trick pony, and it doesn't do that trick very well.



Media Center 280
$100
Cooler Master
www.coolermaster.com
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Thermaltake Kandalf LCS VD4000SWA

If you want to build a liquid-cooled PC, you could start with a regular case and mod it . . . or let Thermaltake do the work for you. The Thermaltake Kandalf LCS is a behemoth case, outstripping even the Gigabyte 3D Aurora. But this monster has a built-in liquid cooling system and space for more hard drives than I care to count.

The Kandalf LCS' liquid cooling system includes everything you'll need: a copper water block, pump, 360mm radiator (complete with three 120mm fans), 350cc tank, some transparent tubing, and coolant. The cooling system also includes two rear fans and an exhaust fan at the top of the unit. (The manual includes detailed instructions on connecting it together.) The radiator is housed in the case's heavy front door. Opening the door reveals the radiator, complete with tightly packed tubing and three fans, along with what seems like an endless stack of silver drive bays.

With nine 5.25-inch external drive bays, two 3.5-inch external bays, and six 3.5-inch internal drive bays, it's unlikely that you'll have to resort to external USB or FireWire hard drives any time soon. In addition to typical ATX and Micro ATX motherboards, the case supports extended

Kandalf LCS VD4000SWA
$349.99
Thermaltake
www.thermaltake.com
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ATX and—by adding an optional rear plate—BTX mobos. The case's left side panel is almost entirely windowed; three large sections provide a full view of the waterworks inside.

There are a few other nice touches, including retractable foot stands and an accessory box disguised as a 5.25-inch drive bay. A small flip-up door atop the case (almost cute, given the mammoth size of this beast) reveals the USB, FireWire, and audio jacks.

By providing all the cooling hardware you'll need, the Kandalf shows that you can build a liquid-cooled PC without compromising style.

Tai Chi VB5001SNA
$429.99
Thermaltake
www.thermaltake.com
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Thermaltake Tai Chi VB5001SNA

Take one look at the Thermaltake Tai Chi and you just know that this case is built for cooling. Covered from top to bottom with fin-like protrusions, the extruded aluminum case looks like a giant heatsink. When you attempt to pick it up, you realize that this case really means business. Weighing 47 pounds, the Tai Chi includes caster wheels so you can roll it around. (There are also sturdy handles built into the top of the case, but using them might cause a hernia.) The Tai Chi is monstrous, in the same league as the Thermaltake Kandalf and Gigabyte's 3D Aurora, but heavier.

With a case that's so impressive on the outside, you simply can't help but wonder what's going on inside. When you unlock the side door, it opens with a satisfying *woosh* as a hydraulic arm pushes it open, revealing the integrated liquid cooling system. As with the Kandalf LCS, the Tai Chi comes with everything you need to set up a liquid-cooled PC tucked completely inside. Dual 4.5-inch fans mounted inside the door, another at the back of the case, and a smaller fan behind the hard drives help keep the system cool. The waterblock, with a clear acrylic cover and blue LEDs, is downright pretty. Just like the Kandalf, this case supports BTX motherboards with the addition of an optional kit. There are plenty of other nice touches, including easy-to-remove aluminum drive plates and a storage tray. It's those convection fins and liquid cooling that give the Tai Chi its mojo. ▲

by Kevin Savetz

Casing The Specs

	Ports	Drive Bays	Window	Other features	Dimensions (HxWxD, inches)	Price
Antec Nine Hundred	2 USB, FireWire mic and audio out	Nine available bays; configurations can vary	Side panel	Top storage area	18.75 x 8 x 19.25	$125
Emermax Phoenix	2 USB, mic and audio out, eSATA (optional)	5 5.25-inch external, 1 3.5-inch external, 4 3.5-inch internal	None	N/A	17.75 x 8.75 x 19.75	$85
Zalman Fatal1ty FC-ZE1	2 USB, 1 FireWire, mic and audio out jacks	4 5.25-inch external, 3 3.5-inch internal	Side panel	Hinged side panel door	17.5 x 9 x 19	$359.99
Gigabyte 3D Aurora 570	2 USB, 1 FireWire, speaker/mic jacks	5 5.25-inch external, 2 3.5-inch external, 5 3.5-inch internal	Side panel (configurable)	Locking front door and side panel	21.5 x 8 x 22.25	$149.99
CoolerMaster iTower 930	4 USB, 1 FireWire, mic and headphones	6 5.25-inch external, 4 3.5-inch external hot-swappable,	None	Four hot-swap drive bays	16.75 x 8.5 x 22	$149.99
CoolerMaster CM Media 280	2 USB, 1 FireWire, mic and headphones; optional media controls	3 5.25-inch external, 1 3.5-inch external, 5 3.5-inch internal	None	Switchable between tower and HTPC configurations	16.75 x 6.75 x 19	$100
Thermaltake Kandalf VD4000SWA	2 USB, 1 FireWire, mic and audio out jacks	9 5.25-inch external, 2 3.5-inch external, and 6 3.5-inch internal bays	Side panel	Watercooling system	21.25 x 9 x 25	$349.99
Thermaltake Tai Chi	2 USB, 1 FireWire, mic and audio out jacks	6 5.25-inch external, 1 3.5-inch external, 3 3.5-inch internal bays	None	Watercooling system	22 x 11 x 21.5	$429.99

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